



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,447	03/31/2004	Zhiwei Dong	SIL.0005US	5462
21906	7590	07/24/2006	EXAMINER	
TROP PRUNER & HU, PC 1616 S. VOSS ROAD, SUITE 750 HOUSTON, TX 77057-2631			GLENN, KIMBERLY E	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 07/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5/

Office Action Summary

Application No.

10/814,447

Applicant(s)

DONG, ZHIWEI

Examiner

Kimberly E. Glenn

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,7-14,16-32 and 34-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-14,16-32 and 34-36 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) 3,5 and 7-10 is/are objected to.
- 8) ☒ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

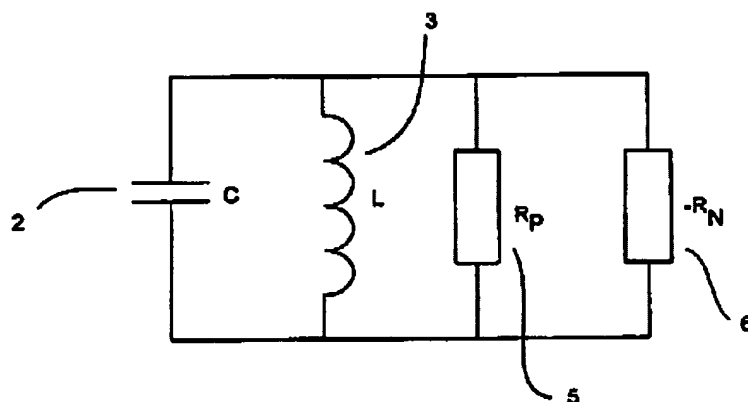
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen US Patent 6,778, 023 in view of Ko et al US Patent 6,028,496.

Christensen disclose a tunable filter comprising an active device (LC tank circuit) providing an input port and an output port, the active device having a bandwidth defined by a cutoff frequency; a reactive component (C, L, Rp) coupled to the output port; and a compensation resistance (-Rn) coupled to the reactive component, wherein the compensation resistance is effective to compensate for a bandwidth limitation of the active device. The compensation resistance having a resistance value that is inversely proportional to the reactive component.



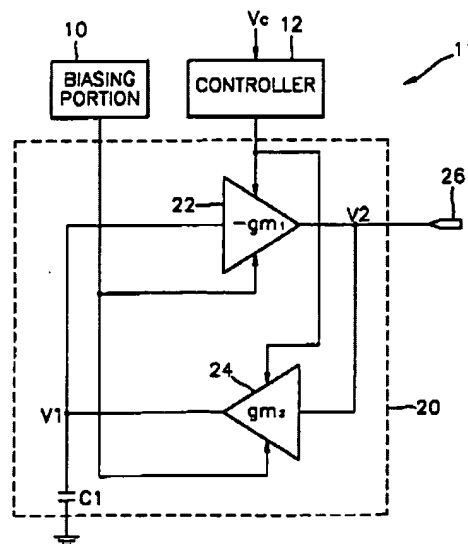
Art Unit: 2817

Thus, Christensen is shown to ^{disclose} ~~teach~~ all the limitation of the claim with the exception of the active device (LC tank circuit) comprises an operational transconductances amplifier.

Ko et al discloses an active inductor comprising a pair of transconductances amplifier 22 and 24, a biasing portion and a controller 12.

Ko et al states in column 1, lines 4 through 17

In wireless, portable telecommunication equipment, the most bulky and expensive components include a wideband monolithic voltage controlled oscillator (VCO) and a wideband tunable monolithic band pass filter (BPF). These components require high-Q passive elements, wherein Q refers to the quality factor, because the frequency characteristics of the VCO and BPF are stabilized and loss is reduced with higher Q. However, the conventional techniques of producing a spiral inductor on a semiconductor and a varactor using a field effect transistor (FET) result in components which exhibit low-Q properties due to the metallic loss and the limited doping of the substrate. Thus, considerable interest has been focused on an active inductor having both high-Q properties and tunable inductance.

FIG. 1

Therefore, one of ordinary skill in the art would have found it obvious to replace the inductor of Christensen with the active inductor of Ko et al. The motivation for this modification would have been to provide an active inductor having high Q properties.

Allowable Subject Matter

Claims 3, 5 and 7-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 11-14, 16-31 and 34-36 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: With regard to claims 3-5, 8, 9, 18, 21 and 22, the prior art of record does not disclose or fairly teach the resistance value being inversely proportional to a tangent of the phase shift at a predetermined compensation frequency. With regards to claims 11-12, 37 and 38, the prior art of record does not disclose or fairly teach a capacitor coupled to an output of the OTA so as reflect an inductor at an input of the OTA. With regards to claims 23-31, the prior art of record does to disclose or fairly teach the first compensated reactive branch coupled between the input node and the intermediate node and the second compensated reactive branch coupled between the output node and the intermediate node. With regard to claims 32, and 34-36, the prior art of record does not disclose or fairly teach the compensation resistance is effective to compensate for a bandwidth limitation of the active device, the reactive component comprising a capacitance and wherein the compensation resistance comprises a compensation resistor having a resistance value that is inversely proportional to a product of a

capacitance value of the capacitance and a tangent of a phase-shift at a predetermined compensation frequency.

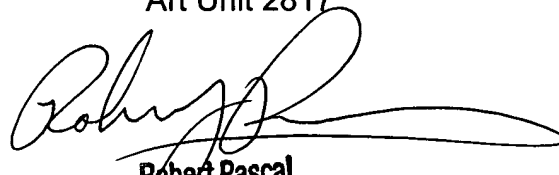
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E. Glenn whose telephone number is (571)-272-1761. The examiner can normally be reached on Monday-Friday 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

keg

Kimberly E Glenn
Examiner
Art Unit 2817



Robert Pascal
Supervisory Patent Examiner
Technology Center 2800